

GEORGE ENGELMANN BOTANICAL NOTEBOOKS

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cataloging the materials.*

Fenestrulae mostly broad oval, sometimes irregular and arched where most expanded towards the border: 8 in longitudinal and 8 or 9 in transverse lines in a space of two lines, indicating nearly equal dimensions in the fenestrular spaces.

Chalices or *cells* large, irregularly placed near each other upon the two sides of a fine line or keel, usually two, sometimes one, and sometimes three to each fenestrula.

Reverse unknown.

Geol. Pos. & Loc.—This beautiful and delicate species was found on the same slab with the *F. nodosa*, and belongs to the Hamilton Group.

FENESTELLA BIFURCATA, Prout.

Polyzoum or *Bryozoum*, a fan-like expansion, with large longitudinal rays and oscules distinctly visible to the naked eye.

Longitudinal rays large, basaltiform, with a middle keel and two rows of chalices; bifurcating seldom towards the base, but frequently and mostly in opposite series towards the middle; four to five in each series.

[April, 1866.]

Engelmanni Brown - lit 1845

Microsphaera Day - lit 1844

Microsphaera 0.45

Missouri 0.43 - 0.52

Common 0.41 - 0.49

27 *Atlantic* 0.40 - 0.50

Robbins 0.49 - 0.52

Adelista 0.43 - 0.48

Camden 0.44 - 0.52

Florida 0.45 - 0.54

Bethel 0.44 - 0.49

West Concourse 0.42 - 0.52

Uxbridge 0.40 - 0.47

W. S. Smith 0.026

Missouri 0.023 - 0.026

Common 0.027 - 0.029

Atlantic 0.026 - 0.028

Adelista 0.027 - 0.029

Camden

Florida 0.029

109-128

Other
Missouri with smooth microsphaera

Third plate - marginal



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GARDEN

13761

and wire-like upon the reverse, some branching, sometimes anastomosing; mostly branching from dissepiments, by which the fenestrules are much diminished in size.

Dissepiments, on the reverse, small and sharply defined; mostly opposite, in straight or curved lines; sometimes alternate.

Fenestrules large, longer than broad, mostly quadrangular, sometimes rounded at angles and more or less irregular in size. On the medallion face the fenestrules are crowded by the growth of the cells, and are more or less oblong oval.

RETEpora HAMILTONENSIS, Prout.

Bryozoum a broad, funnel-shaped expansion, with longitudinal rays frequently branching and rapidly diverging so as to give an explanate or flat form to the funnel, which only shows the reverse or lower surface.



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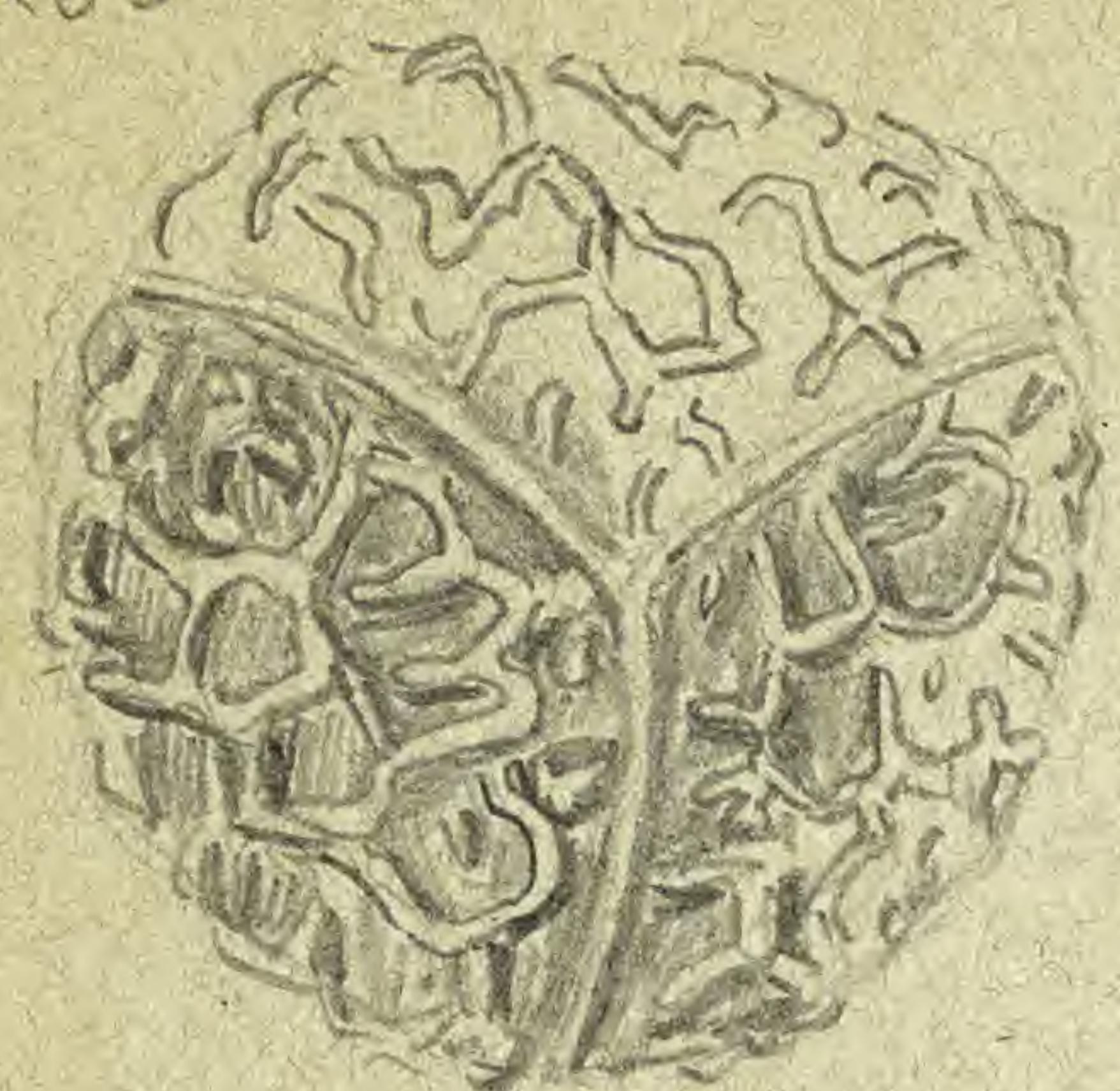
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x60



Isoetes ligulata var.

Nov 26 1863.

St Louis Sept 1862



dry



wet

= 0.023

- 0.026

Mean $0.025 = 0.20$

$\frac{10.7 - 13.2}{60} = 0.18 - 0.22$

$\frac{22 - 27.5}{60} = 0.37 - 0.46$

mm
Delaware 1858 mm

mm
 $\frac{26 - 31}{60} = 0.43 - 0.52$ mm



mm
 $\frac{12.5 - 15}{60}$

mm
0.21 - 0.25 mm. Mean $0.23 = 0.49$



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cm

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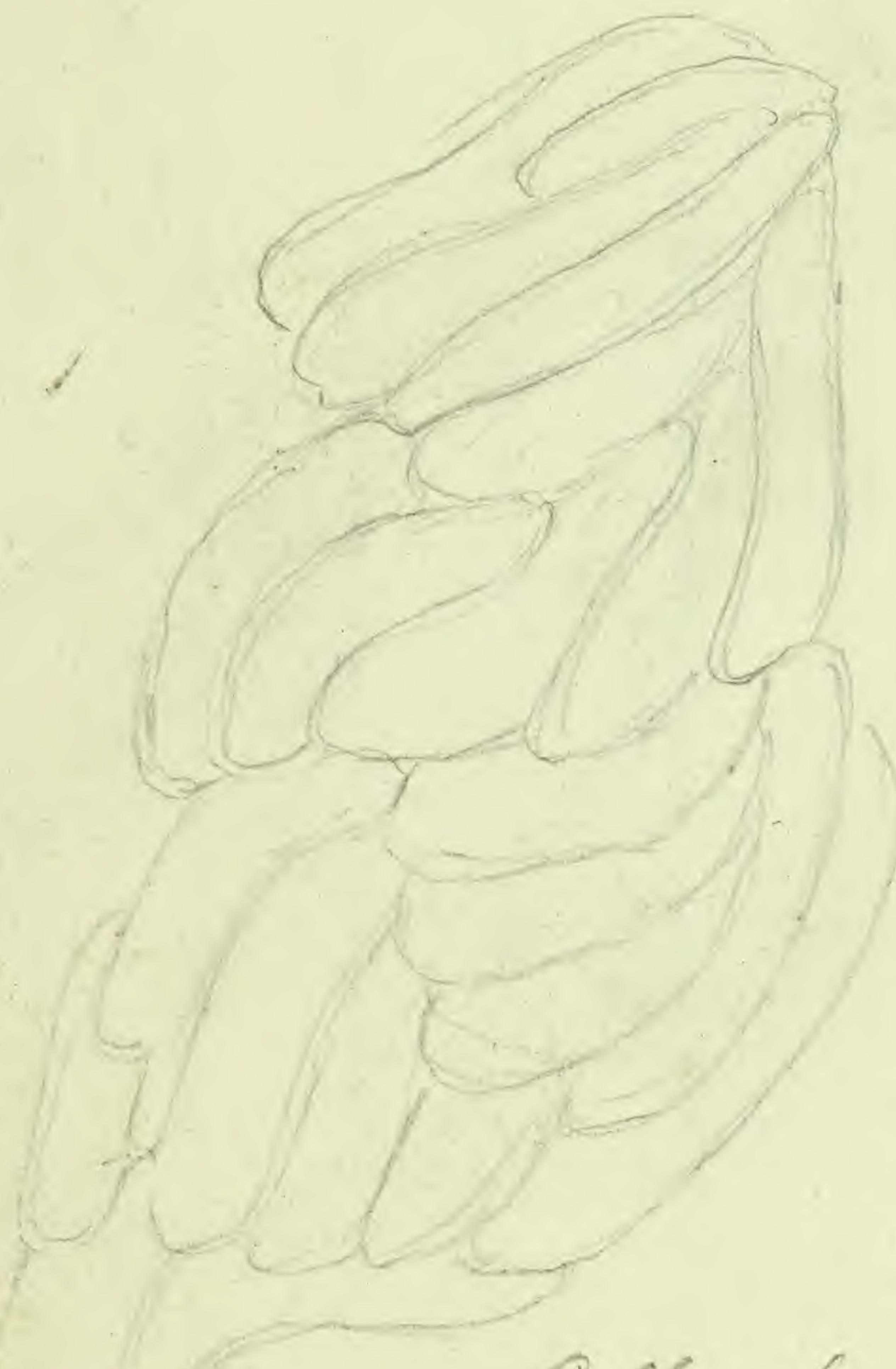
Oct 8 1866

Loctis laguncularis

St Louis Sept 1862

both collected in same
ground at same time
not distinguishable
otherwise

• x 280



Cells of Sporangium
of the melanopodous
form

Cells of Sporangium walls thicker brown,
of common form, colourless white cell light
very thin brown



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ANEX. Leitch.

APOTHECARY & CHEMIST,

Cor. 4th & Olive Sts., St. Louis.



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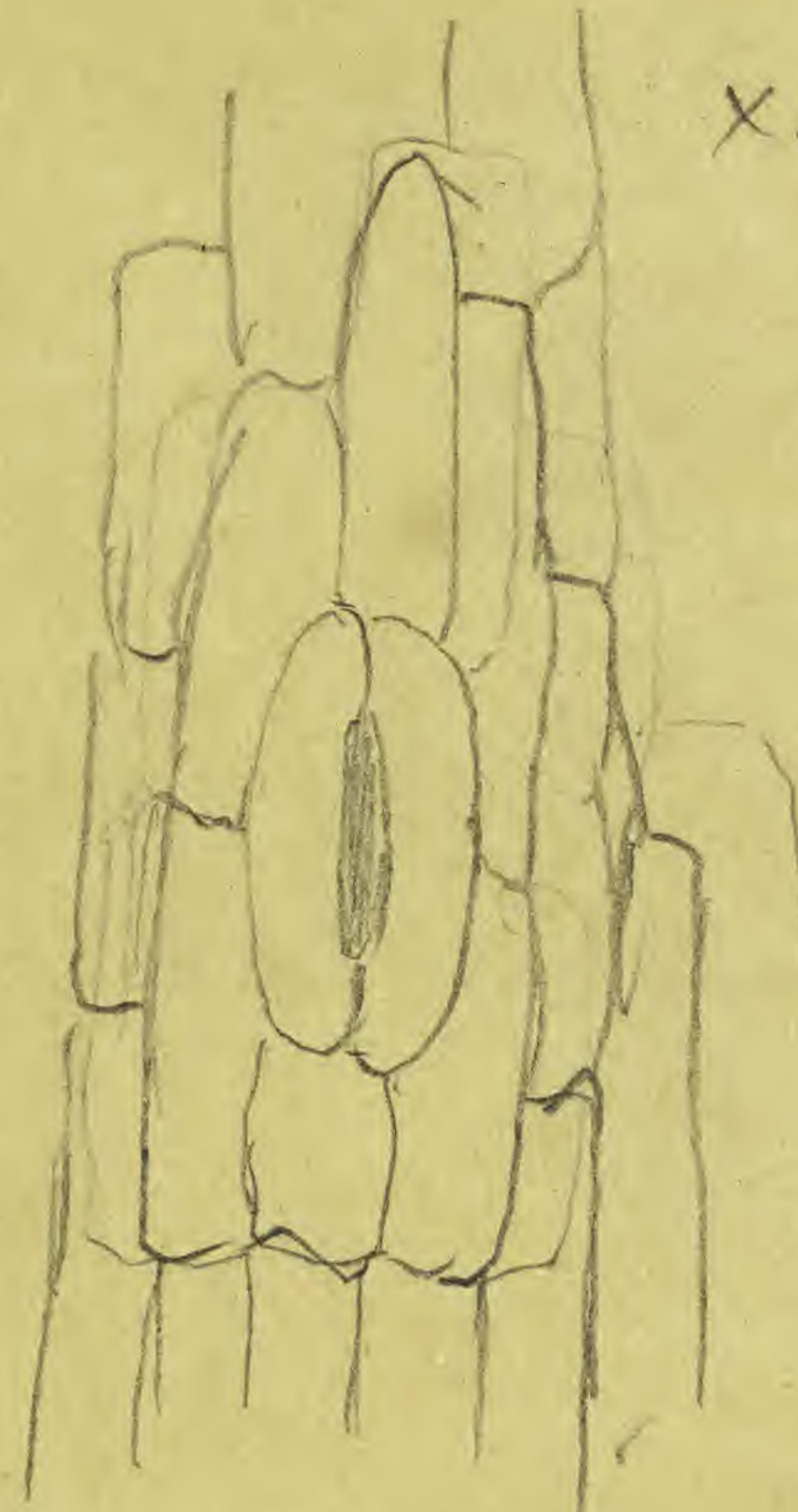


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GARDEN

Sept 21 1866

x280

Portulaca living plant cult
cult for Delaware



1 cell of Leaf

x10

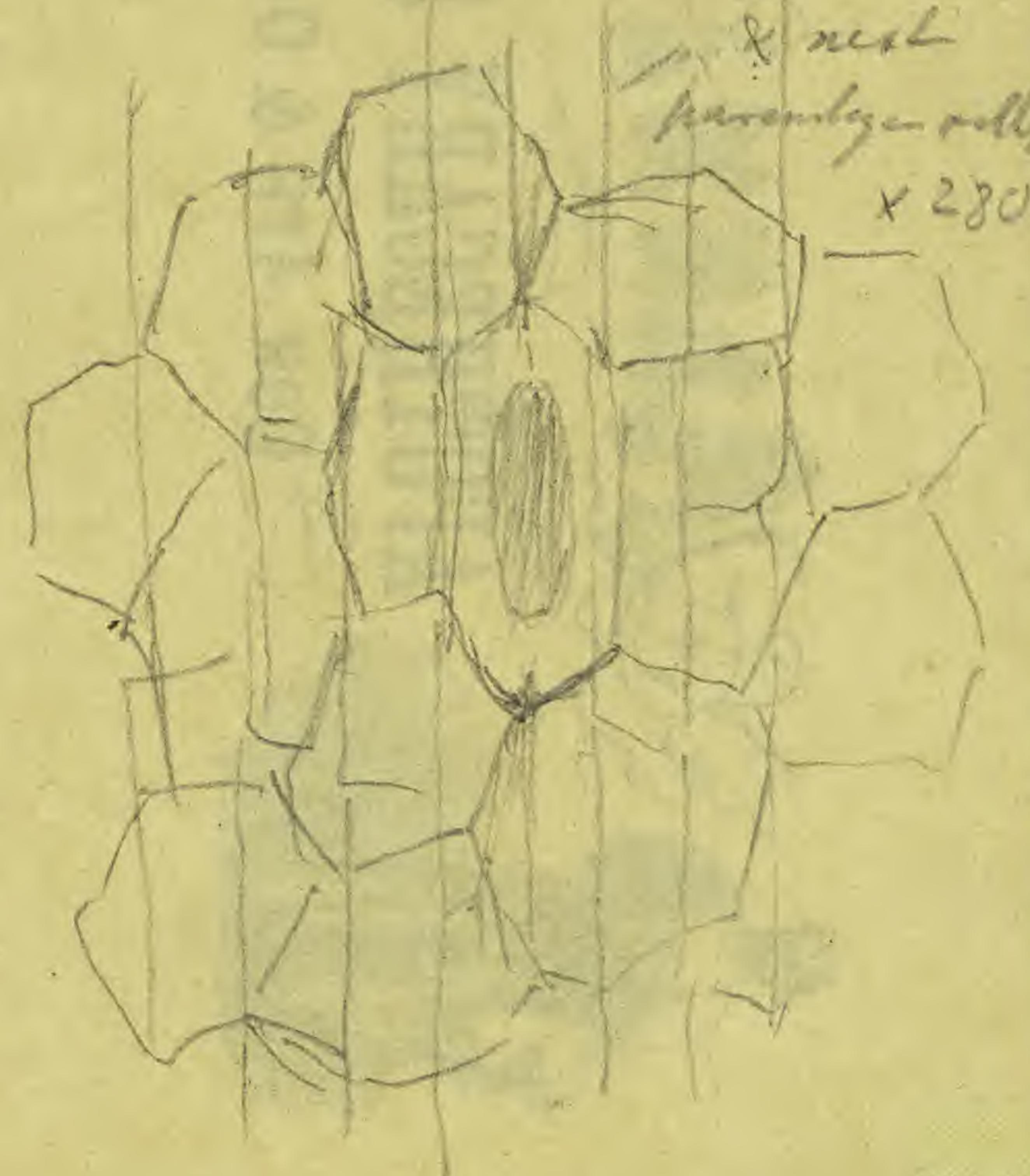


oil 21

epidermis
& meso
parenchyma cells

x280

stomata partially
abundant, - parts none at all



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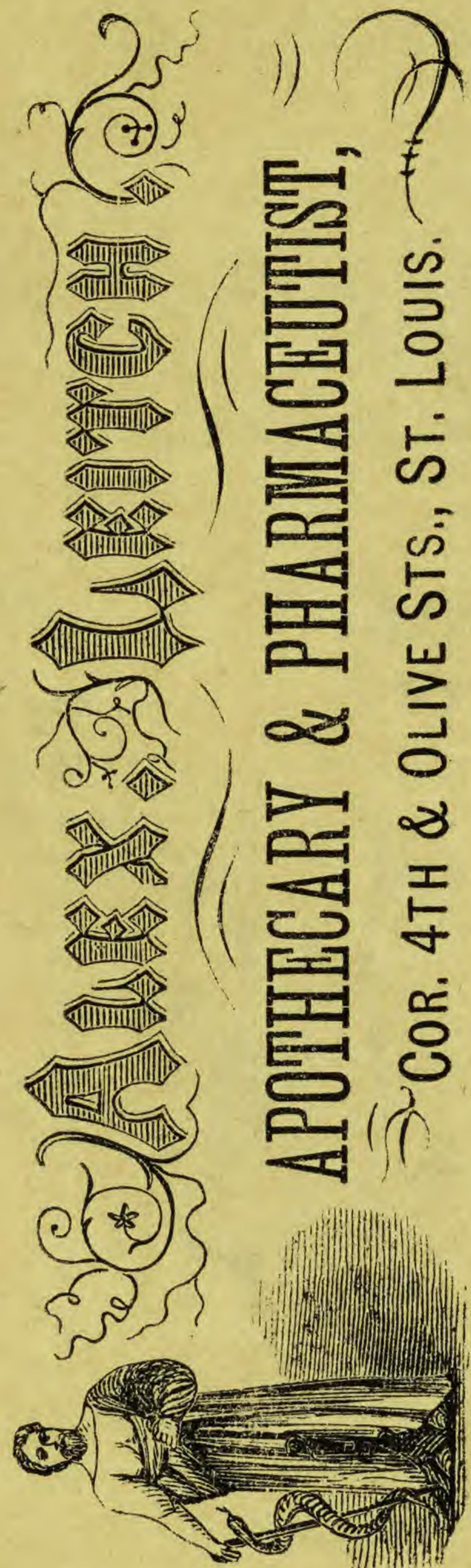
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APOTHECARY & PHARMACEUTIST,

COR. 4TH & OLIVE STS., ST. LOUIS.



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cm

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Microspores of *I. Engelmanni*

Oct 5 1866



Missouri, Engelm. Sept 1862

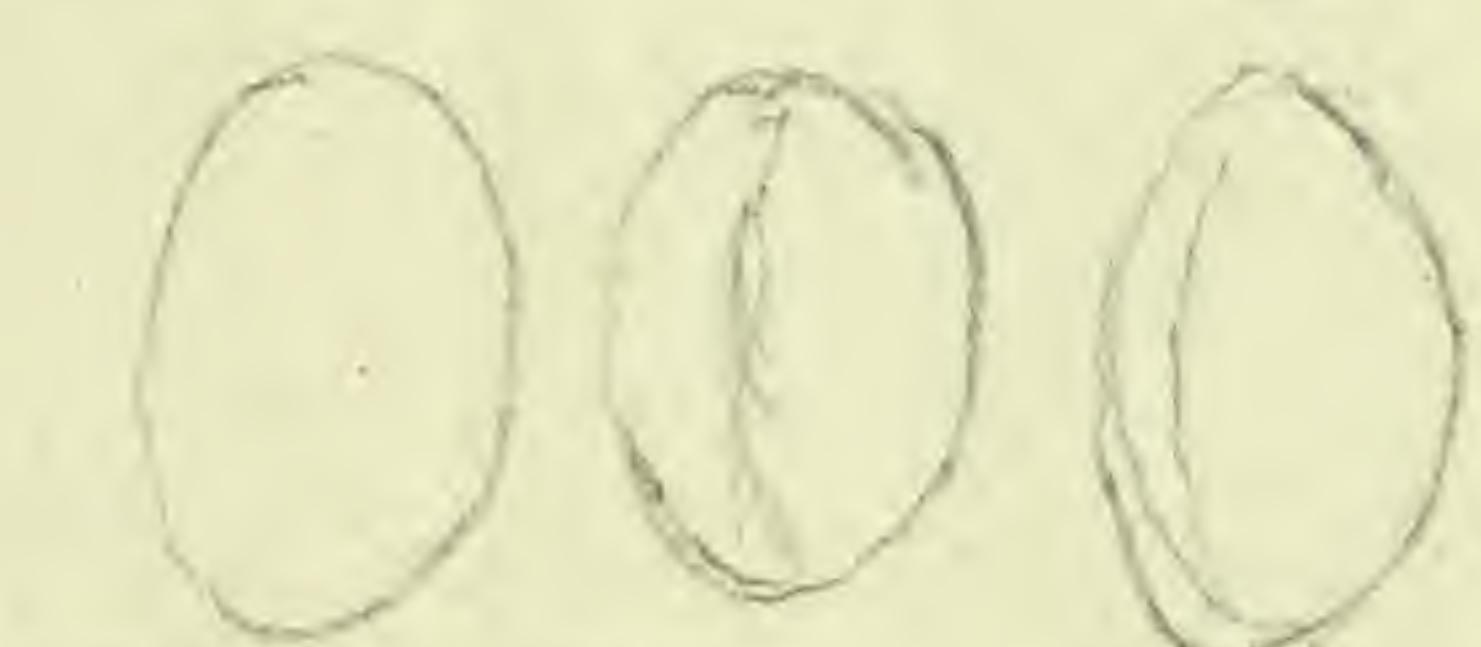
Sept 1862



Delaware, Canby
16 July 1866



Philadelphia. Hunt
4 July 1866



Delaware, Canby
23 July 1866



Hastings, Commd. West
of Macon



Newport R.I.
ex Hb. Durand



Delaware, Commons
Sept 19 1866



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13765

Alex. Leitch.

APOTHECARY & CHEMIST,

Cor. 4th & Olive Sts., St. Louis.



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Isoetes Engelmanni

July 29 1866

3½ miles from Camden, N. Jersey on Atlantic City Ave. 8th & June
numerous leaves, 6-9 inches long. ~~July~~ 1863
in soft mud

Sporangia x60

26.5 - 31

60

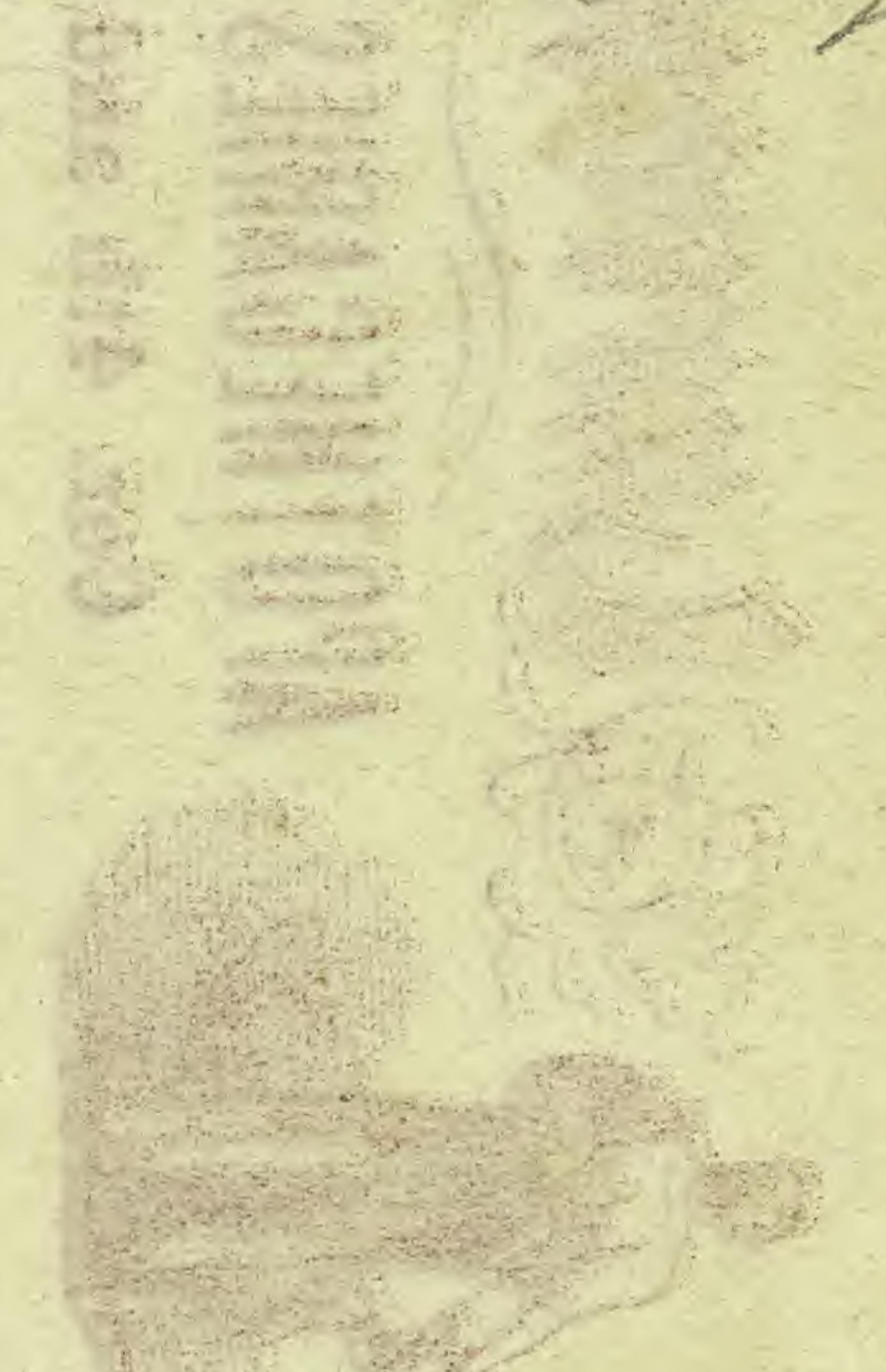
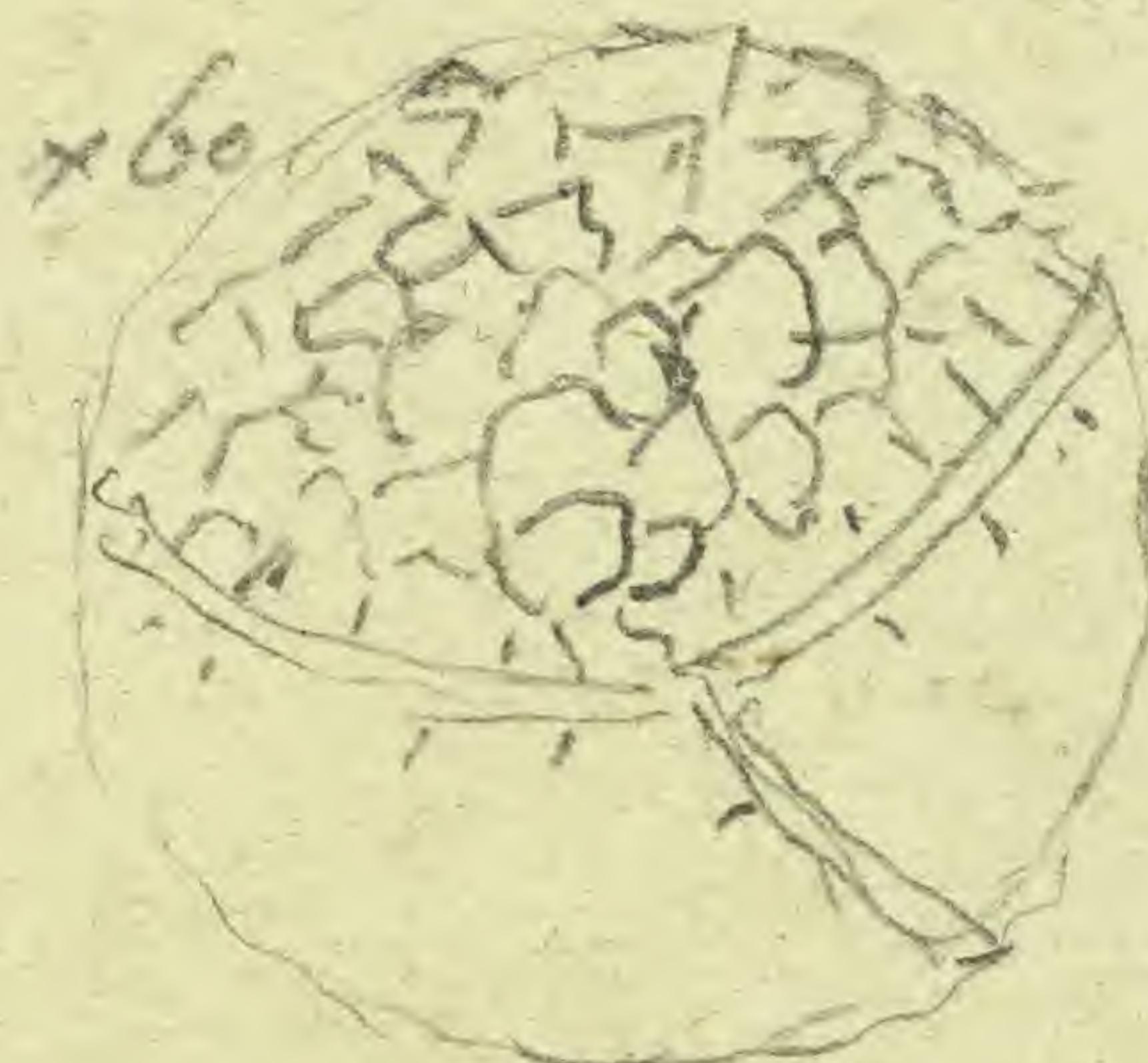
= $0.44 - 0.52$ mm. diam.

much more divided
reticulately than big
Isoetes

x2



x60



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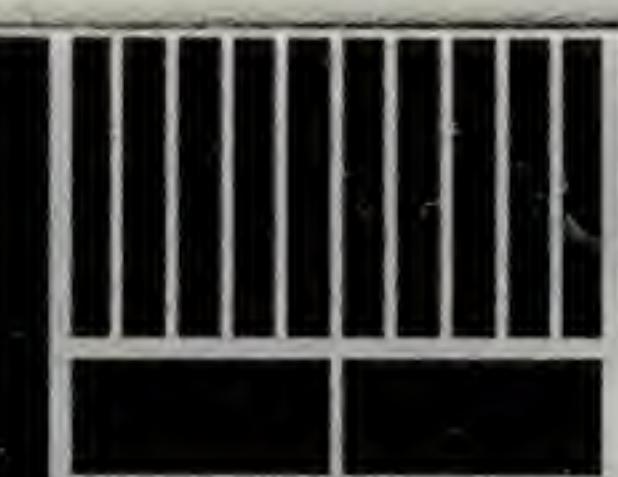
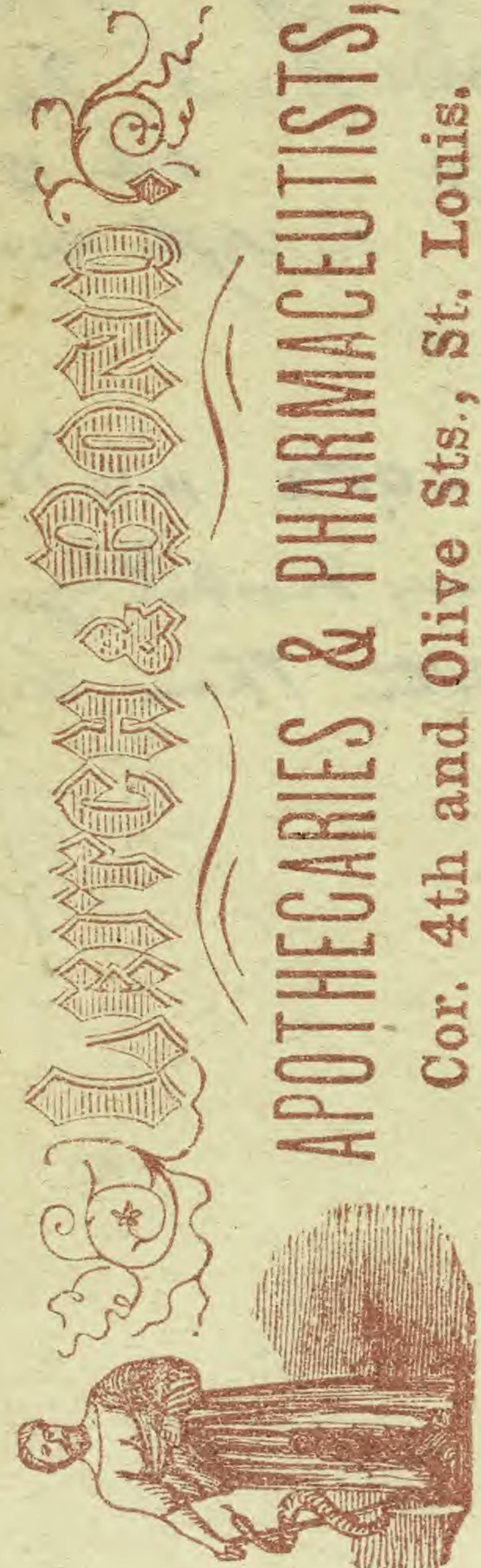
cm

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cm

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Boote, Eggleston
New Haven, Eaton

July 20 1867

H. C. Porter

(Specimen retained)

$$\frac{25-28}{60} = 0.41-0.47 \text{ mm}$$

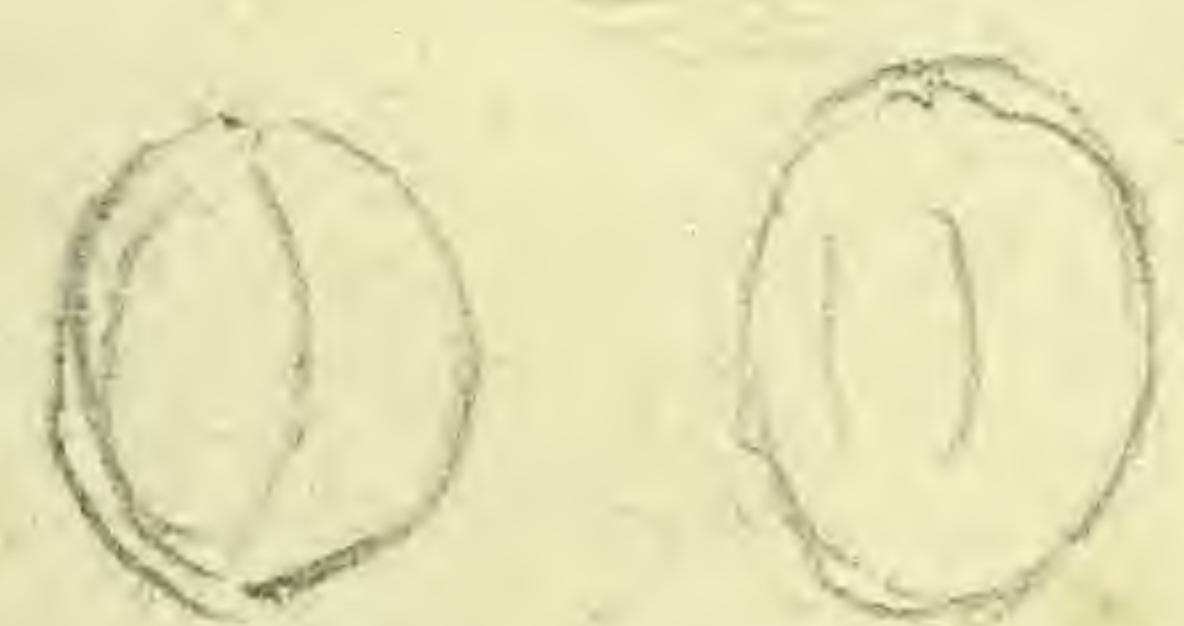
diam of (not fully ripe
nor well formed)

macrospores

about 15 slender hair

12-15 cm long

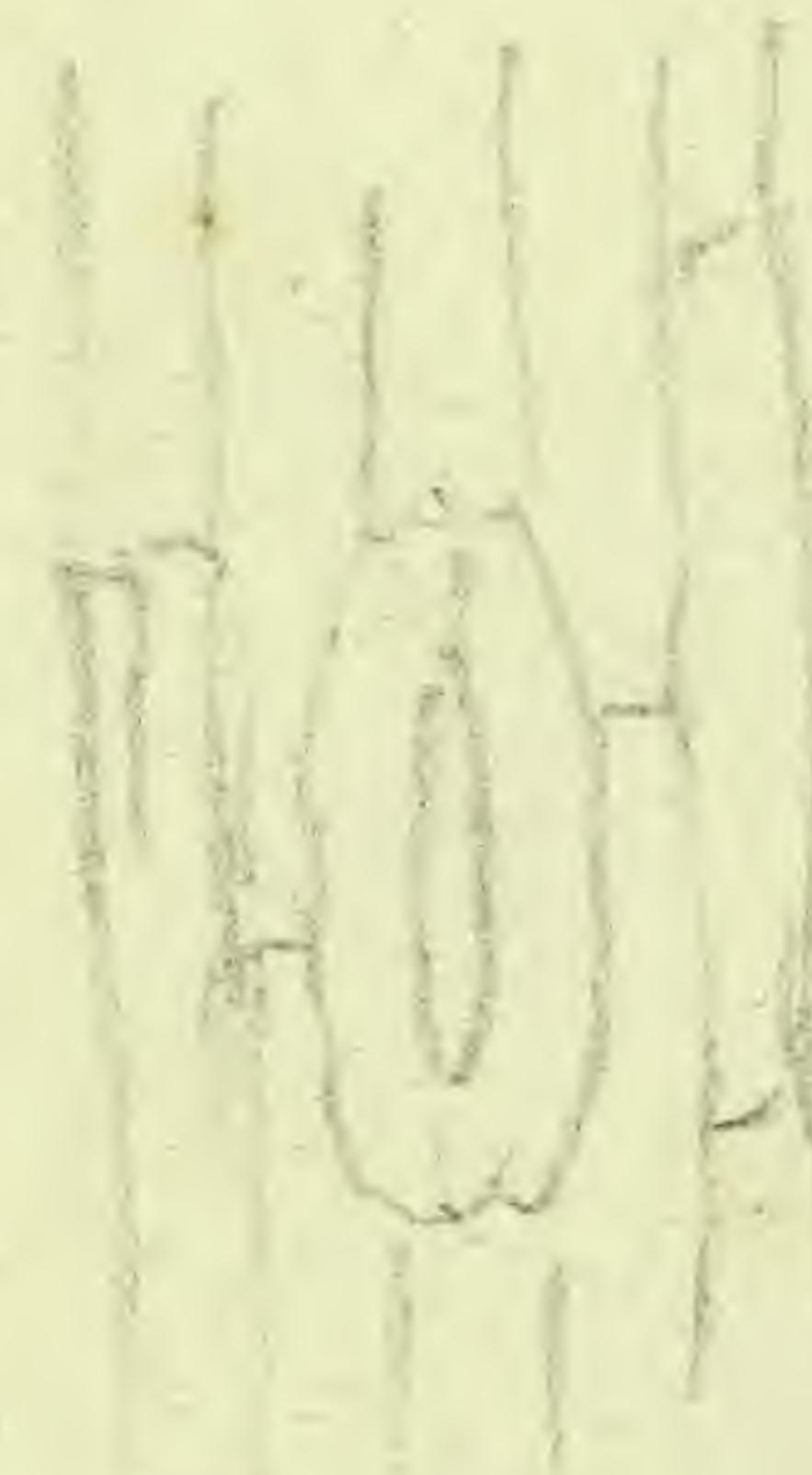
best bundle



microspores smooth

$$\frac{9-10}{4-15} = 0.022-0.026 \text{ mm long}$$

stomata
small
and few



0 1 2 3 4 5 6 7 8 9 10

cm

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GARDEN

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ALEX. LEITCH,
APOTHECARY & PHARMACEUTIST,

Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.



0 1 2 3 4 5 6 7 8 9 10

cm

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Zoctes Engelmanni

July 20 1867

Bethlehem, Pa, leg. J. Wolle.

T.C. Porter mis.

Specimen returned



$$\frac{32-36}{60} = 0.53-0.60 \text{ mm}$$

20. leaves

stout 18-20 cm by

dia. of macrospores very large!
m. very strongly reticulated

numerous stomata

weak tubercles

sporangia pale



microspores large

very slightly tuberculated

$$\frac{12.5-14.2}{6.15}$$

$$= 0.030-0.034 \text{ mm long}$$

×280



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cm

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GARDEN

13768

ALIX. ETTCH.
APOTHECARY & CHARMER'S
ST.

Marble Building Cor. Fourth & Olive Sts. St. Louis Mo.



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cm

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GARDEN

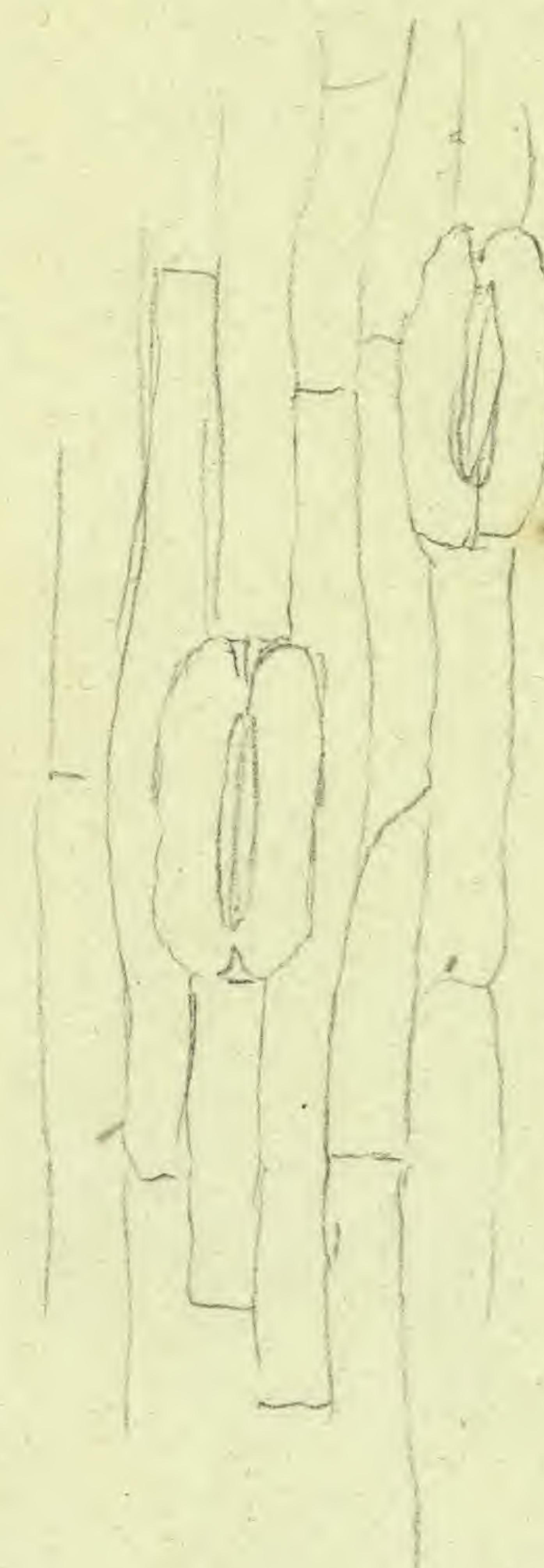
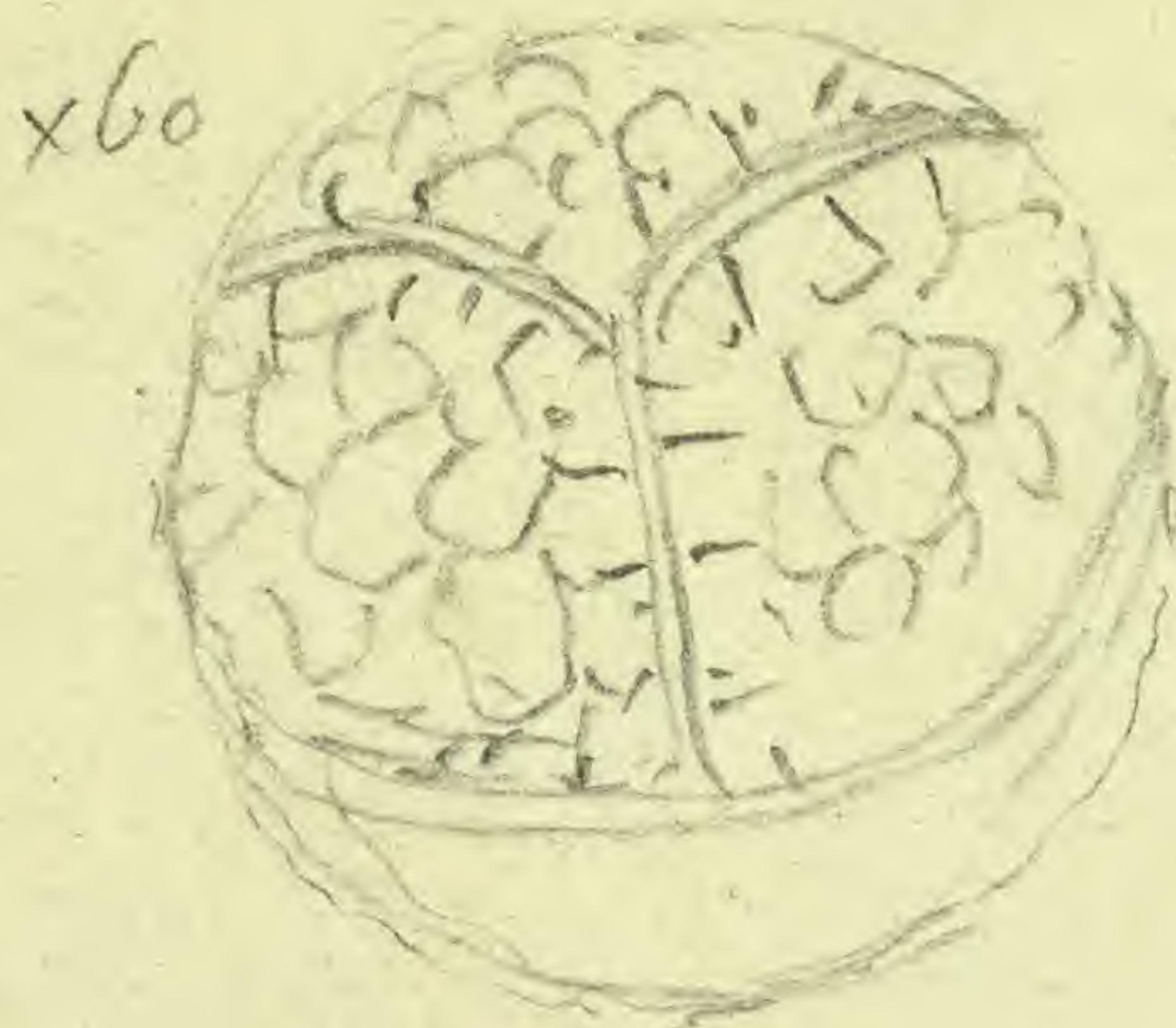
Isoetes Lagenaria
mill pond stream, West Cambridge, water drawn off
diamet $\frac{25-30}{60}$ in
= 0.42-0.52 mm

Oct 4 1866

Oct 26 & Nov 5 1865 W. D. Bratt

leaves 5-6 inches long
30-50 - partly prostrate

no microspores found
macrospores in all the leaves
and scarcely ripe



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cm

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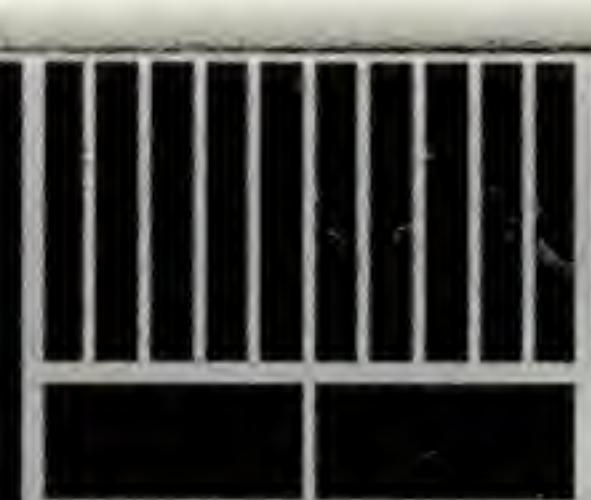


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13769

ALEX. LETTICE,
APOTHECARY & PHARMACEUTIST,

Marble Building Cor. Fourth & Clive Sts. S' Louis, Mo.



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cm

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1. *Engelmanni*
~~it~~ *legitima*
rupicola
gracilis
~~lanceolata~~
2. *velida*



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cm

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GARDEN

13770

S, &c., will always be found
to compare with any other

on the full lines of

IT GOODS,
HOSIERY,
GLOVES,



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cm

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Isoetes Lagellmanni and
I. valide

are found near Wilmington, Delaware
only (with the exception of var. *impestris*)
in shallow ponds or very oft. in ditches
along railroads, in what might be
called the white clay district, or the
Magnolia (*E. glauca*) swamps -
most always in gravel or coarse
sand covered by a layer of 5-8
(or ~~soady~~ clay) inches of clayey
mud; ~~on top of which~~ thick
under water, oft. only $\frac{1}{2}$ to 2
inches, $\frac{3}{5}$ of the leaves being
emerged.

These swamps are called
Magnolia or Cranberry swamps,
contain Sphagnum and of
plants oft. *Rhus vinifera* and
Solidago neglecta.

Wm M. Cary in Ct. Nov. 27 1861



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cm

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GARDEN

Ex

W

St. Louis, Mo.

No. 258 West. Granite Street,

Apostelkær und Erognist,

Georg Kühn

1771.



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Goetzea lugdunensis

In a now dry, ditch near Wilmington Del. Leaves erect. The same place in the same locality, then ^{covered by} with a few inches of water was collected last year in the beginning of October with leaves spreading on the water in every direction.

Wm Canby

July 16 1866

GOETZEA
LUGDUNENSIS
WILMINGTON DELAWARE
W.M. CANBY



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI
BOTANICAL
GARDEN

South-West Corner-Fifth and Market Streets
Average Prices
Lettich & Coblies

1872



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cm

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Isocete Engelmanni

found by Prof Leidy in a ditch of very clear water on the Rail Road to Atlantic City 4 miles from Camden N.J. It is immersed and its leaves spread flat in the bottom of the water. In this way it covers the bottom like a carpet of beautiful green colour. When the water is shallow, the leaves are more or less erect and mixed up irregularly. It grows in light mud.

E. Durand in Citt. Oct 13 1866

[Immersion of leaves because ditch flooded by recent rains ??]



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cm

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COR. 4TH & OLIVE STS. ST. LOUIS

APOTHECARY & PHARMACEUTIST

ALEX. LEITCH

13773



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GARDEN

Isotoma *Eaglesmanni*
var. *superstis*

"On a rocky knoll on a hillside ^{on Brandywine Creek} near Wilmington, Del., where the ground is quite dry, except in spring, when a little water is oozing out on the side of the knoll among the rocks so as to form barely a moist spot.

As the season advances it gets quite dry, and is, by the last of June, overgrown with grass and some poor *Carex* *wildecornii*.

At Commons.

This is the only instance where a *Isotoma* has been found in the hilly country; *Eaglesmanni* and valid ground otherwise only in the white-slopes, of which *Magnolia* *glauca* is the characteristic plant.

W. H. Combs



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GARDEN

South West Corner Fifth and Market Streets
DRUGGISTS
Leitch & Coblies

13774



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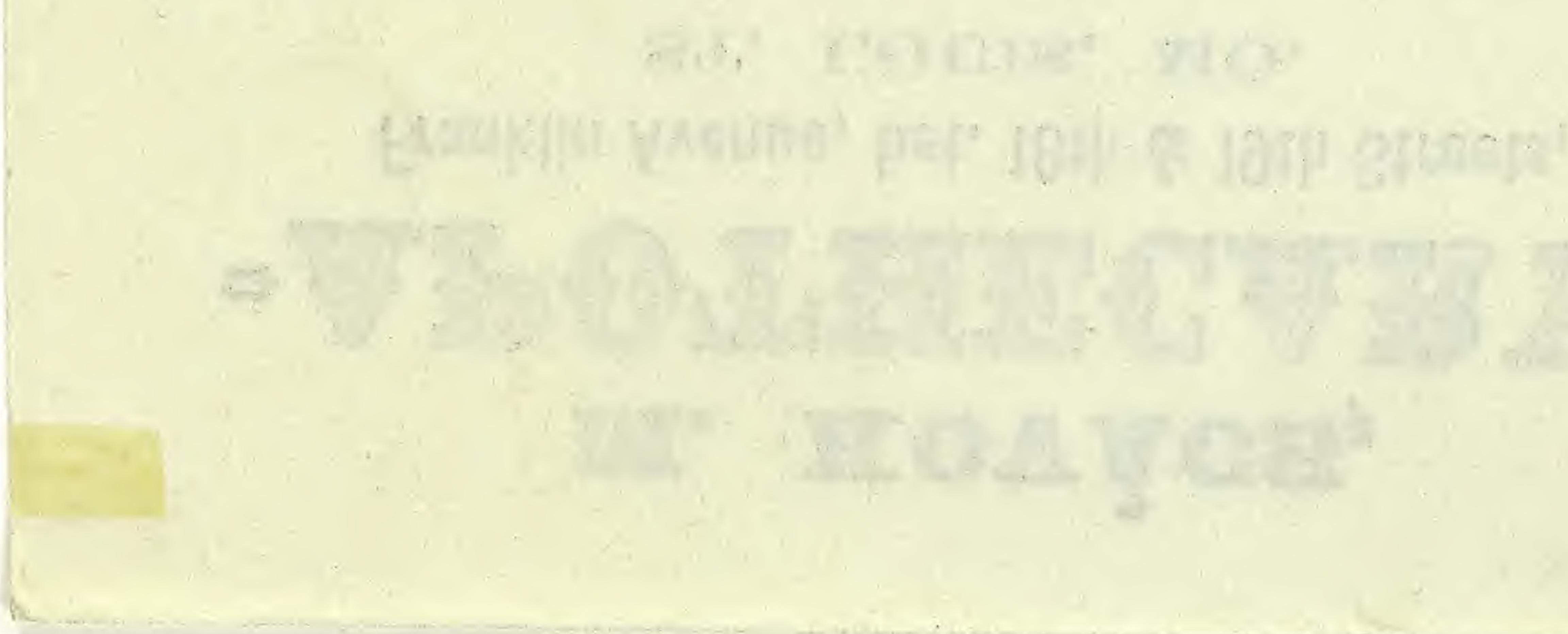
cm

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F. Braun, Carlsruhe May 27 1845
just received your Cham & Porter
-- that from the Delaware is
certainly distinct from your Missouri
plant, and Regel collected a third
one in Florida. You must alter
the name microsperma as if
you do not know a better one
I propose *T. Regeliana* Braun
in lit.



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MISSOURI
BOTANICAL
GARDEN

ST. LOUIS, MO.
Franklin Avenue, bet. 18th & 19th Streets,
•APOTHECARY•
M. KOVACS,

SL775



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cm

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MISSOURI
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Scooter Engelmanii
on the Atlantic City Railroad, near
Camden, New Jersey.

Leaves short, stout, spread quite flat
on the mud, very symmetrically and
covering all the bottom of the pool,
where the water was deep. In the
shallow places some leaves would
stand up, out of water, irregularly.
The bottom was the softest kind of
mud.

E. Drinnon - Citt. Nov 8 1866.



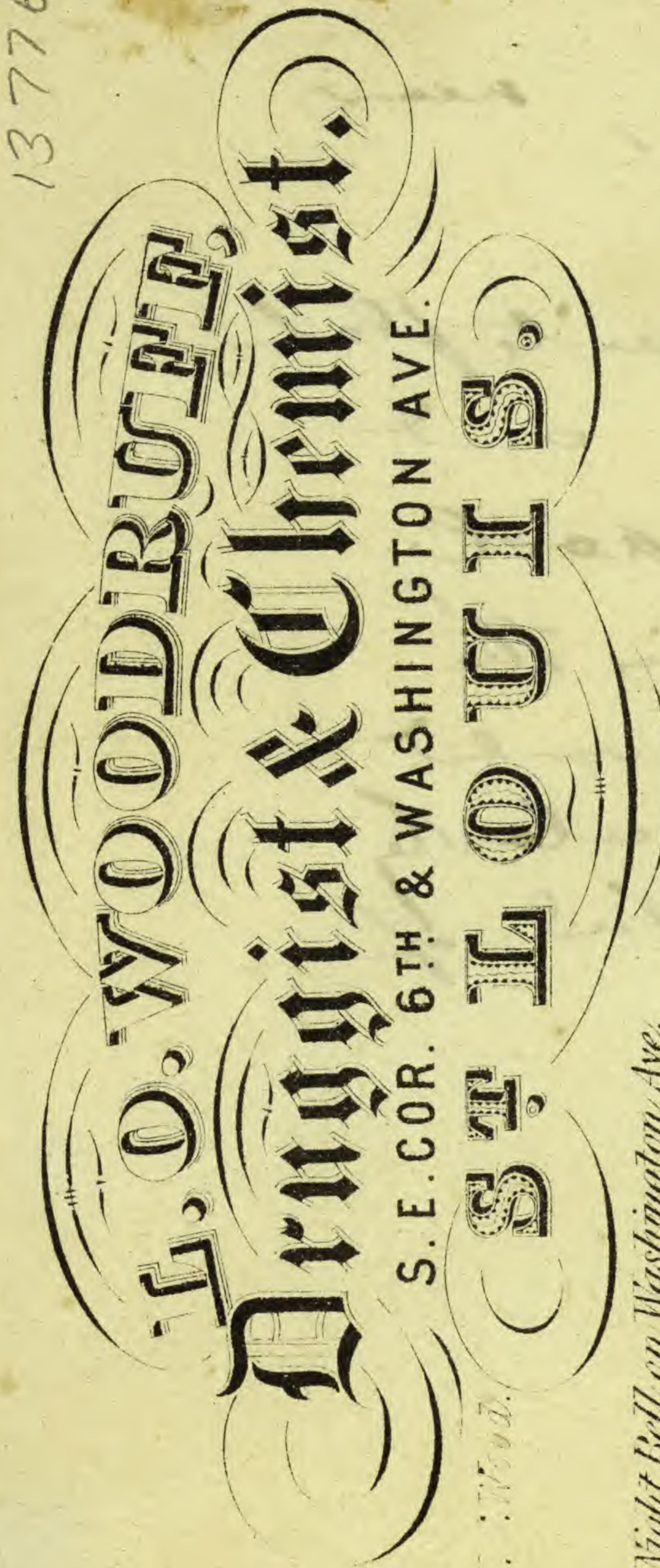
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Night Bell on Washington Ave.



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Isoetes Engelmannii Adanson & Flora 1846 pl 12
(char. emendat Jac (1859) emersa; rhizomate magno
placenta, formi depresso-plexus non orbicularis; foliis
elongatis gracilibus flexuosis, lato virantibus
sue flavo-virantibus; vaginis elongatis
(Dracontio conspicuus); sporangiis ovatis magnis
sporis numerosis 500'c'us, ruforibus, elegantibus
reticulatis.

Roots of 1 inch - plants, leaves 8-12 inb
long; sheaths $\frac{1}{3}$ - $\frac{2}{3}$ inch long; Spores 1000 each
0.2 in - diameter. White I. compacta has
spores near 0.3 in diameter.

The species from Delaware has
only sporangia a little smaller, that is the
only difference between it - & the Missouri
plant.



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New York Aug 14th 1858

13777

my dear Doctor

I am sorry that
"my line" could not induce you to
come here - You certainly owe me a
visit after the long one I paid you
at Cambridge two years ago - and here
I come to meet you, as far as New York
and you refuse. It is too bad.

I am almost sorry that I did not
come with Torrey yesterday - but now
he stays here till Monday, makes me
work at the Baudouy ^{Exhibit} -
I myself stay till then - and there
are so many things where a few
minutes conversation would be
better than long letters - but I will
see Torrey again this evening and have
a talk with him - before I consider
what to do - and before I write ~~further~~
- This Sunday and the forenoon quick
these stops are also in my morrow
meetings -



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